

Claims:

1. A database management device managing information comprising required matters including an effective period as one data unit and preparing following data corresponding to the data when the effective period of the data expires, which comprising:

relevant information adding means for adding relevant information mutually associated with the data to both or either one of a specific data of which effective period expires and/or a following data corresponding to the specific data.

2. A database management device according to claim 1, which further comprising:

relevant information searching means for searching corresponding data referring to the relevant information including the data at the time of referring to the specific data or the following data.

3. A database management device according to claim 2, wherein the data is the information to carry out the security communication on a network and the effective period is that of the information.

4. A database management device according to claim 3, wherein the information to carry out the security communication contains either one of an authentication algorithm, an encryption algorithm, an authentication key, or an encryption key.

5. A database management device according to claim 4, wherein the data is SA (Security Association) applied to the IPSEC (Internet Protocol Security Protocol) Communication.

5 6. A database management device managing information comprising required matters including an effective period as one data unit and preparing following data corresponding to the data when the effective period of the data expires, which comprising:

10 effective period management means for storing the effective period and the reference information of data including the effective period associating each other and notifying of the expiration when the effective period expires; and

15 data control means for performing on the data specific processing due to the expiration of the effective period at receiving the notice from the effective period management means.

7. A database management device according to claim 6, wherein the specific processing is to prepare the corresponding following data.

20 8. A database management device according to claim 6, wherein the specific processing is to delete the data of which effective period expires.

25 9. A database management device according to claim 6, in which the information containing the required matters includes the time information to prepare the following data before the effective period expires, which further comprising:

update management means for storing the time information and the reference information of data including the time information associating each other and notifying to the effect that the time indicated by the time information has come; and

5           the data control means prepares the following data at receiving the notice from the update management means.

10.       A database management device according to claim 6 or claim 9, which comprising:

10           relevant information adding means for adding the relevant information associated with the data each other to both or either one of a specific data of which effective period expires and/or the following data corresponding to the specific data.

15       11.       A database management device according to claim 10, which comprising:

          effective period extension means for storing the extension period information to extend the effective period and renewing the effective period of data of which effective period expires to the period  
20       indicated by the extension period information when the effective period expires.

12.       A database management device according to claim 6 or claim 9, which comprising;

25           searching order management means for setting the searching order of the following data in front of the data corresponding to the following data.

13        A database management device according to claim 6 or claim 9,  
which further comprising:

          searching frequency monitoring means for monitoring the  
searching frequency of the following data and the data corresponding to  
5    the following data; and

          the searching order management means changes the searching  
orders of the specific data and the following data according to the  
searching frequency.

10    14.        A database management device according to claim 6, wherein  
the data is information to carry out the security communication on a  
network, and the effective period is that of the information.

15    15.        A database management device according to claim 14, wherein  
the information to carry out the security communication contains either  
one of an authentication algorithm, an encryption algorithm, an  
authentication key, or an encryption key.

20    16.        A database management device according to claim 15, wherein  
the data is SA (Security Association) applied to the IPSEC (Internet  
Protocol Security Protocol).

25    17.        A database management method of managing information  
comprising required matters including an effective period as one data  
unit and preparing following data corresponding to the data when the  
effective period of the data expires, which comprising the steps of:

adding relevant information mutually associated with the data to both or either one of a specific data of which effective period expires and/or a following data corresponding to the specific data; and

5 searching corresponding data referring to the relevant information including the data at the time of referring to the specific data or the following data.

18. A database management method of managing information comprising required matters including an effective period as one data unit and preparing following data corresponding to the data when the effective period of the data expires, which comprising the steps of:

10 storing the effective period and the reference information of data including the effective period associating each other and notifying of the expiration when the effective period expires; and

15 performing on the data specific processing due to the expiration of the effective period at receiving the notice.

19. A computer readable storage medium storing a program for executing a computer for managing information comprising required matters including an effective period as one data unit and preparing following data corresponding to the data when the effective period of the data expires, which comprising the steps of:

20 adding relevant information mutually associated with the data to both or either one of a specific data of which effective period expires and/or a following data corresponding to the specific data; and

25 searching corresponding data referring to the relevant information including the data at the time of referring to the specific data or the following data.

20. A computer readable storage medium storing a program for  
executing a computer for managing information comprising required  
matters including an effective period as one data unit and preparing  
5 following data corresponding to the data when the effective period of the  
data expires, which comprising the steps of:

storing the effective period and the reference information of  
data including the effective period associating each other and notifying  
of the expiration when the effective period expires; and

10 performing on the data specific processing due to the  
expiration of the effective period at receiving the notice.